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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
08/951,991	10/16/97	GREENLEAF	J 69.66.98248

EXAMINER

ART UNIT	PAPER NUMBER
3737	7

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DATE MAILED: 08/21/98

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

☑ Responsive to communication(s) filed on 6-5-98

☐ This action is FINAL.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), ~~or thirty days~~, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☑ Claim(s) 1-9 is/are pending in the application.
Of the above, claim(s) _____ is/are withdrawn from consideration.
☐ Claim(s) _____ is/are allowed.
☑ Claim(s) 1-9 is/are rejected.
☐ Claim(s) _____ is/are objected to.
☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

☑ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. (Approved)
☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
☐ The specification is objected to by the Examiner.
☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.
☐ received in Application No. (Series Code/Serial Number) _____
☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☑ Notice of Reference Cited, PTO-892
☑ Information Disclosure Statement(s), PTO-1449, Paper No(s). 5
☐ Interview Summary, PTO-413
☐ Notice of Draftperson's Patent Drawing Review, PTO-948
☐ Notice of Informal Patent Application, PTO-152

08/951,991

--SEE OFFICE ACTION ON THE FOLLOWING PAGES--

★ U.S. GPO: 1998-404-496/40517

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3-6 and 8-9 are rejected under 35 U.S.C. 102(b,e) as being anticipated by Parker et al.

Parker et al is directed to a beam producer said to be "sonar/ultrasound/swept frequency vibration or audio source with subsequent Doppler shift analysis (Col. 7 lines 9-14 and 24-38) by the use of a vibration function generator 100 which has adjustable frequency and signal shape (Col. 8 lines 6-17) and object vibration detection is by either Doppler or B-modes.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parker et al as applied to claim 1 above, and further in view of Sarvazyan ('565), Col. 1 lines 60-63 which

teaches the equivalence of MRI to the ultrasound used in Parker et al in the imaging of tissue motion.

5. Claims 1, 4-5 and 9 are rejected under 35 U.S.C. 102(b,e) as being anticipated by Bowen. Bowen includes disclosure of use of pulse-modulated ultrasound to induce thermal stresses which in turn are ultrasonically imaged by a detector, Col. 3 line 62-Col. 4 line 39 for example. Since a pulse is inherently a form of amplitude modulation the base claim 1 is met. Since the thermal stress manifests as expansion the detection is effectively of a form of motion and therefore claim 5 is met.

6. Claims 1, 4-5 and 9 are rejected under 35 U.S.C. 102(b,e) as being anticipated by Shimura et al or Sato et al.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimura et al or Sato et al as applied to claim 1 above, and further in view of Sato et al (Acoustic Imaging V20 article pgs. 9-18, of record.)

8. The two patents which differ with respect to through transmission ('460) and reflective transmission ('255) are both directed to pulse amplitude (modulation) to provide a pump pulse e.g. Fig. 7(c) of the latter which pulse is directed at the patient, and a detector system (ultrasonic phase detection and/or display) which serves as a carrier for the object motion signal out of the body. With respect to claim 2, the Sato et al article establishes that an audio output would be the equivalent of a display or recording since the patents' technology is effectively a form of percussion which was heretofore audibly observed.

9. Claims 1, 3-9 are rejected under 35 U.S.C. 102(b,e) as being clearly anticipated by Sarvazyan.

10. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sarvazyan as applied to claim 1 above, and further in view of Sato et al (Acoustical Imaging Vol. 20 article). Insofar as the latter establishes the equivalence of acoustic force provision to percussion wherein audible output is a simple and effective output modality for a user.

Any inquiry concerning this communication should be directed to Examiner Francis J. Jaworski at telephone number (703) 308-3061.

Francis J. Jaworski
Primary Examiner

FJJ:fjj

8-13-98